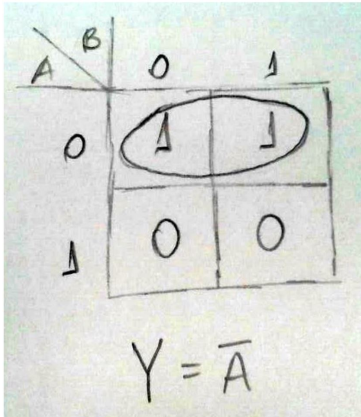
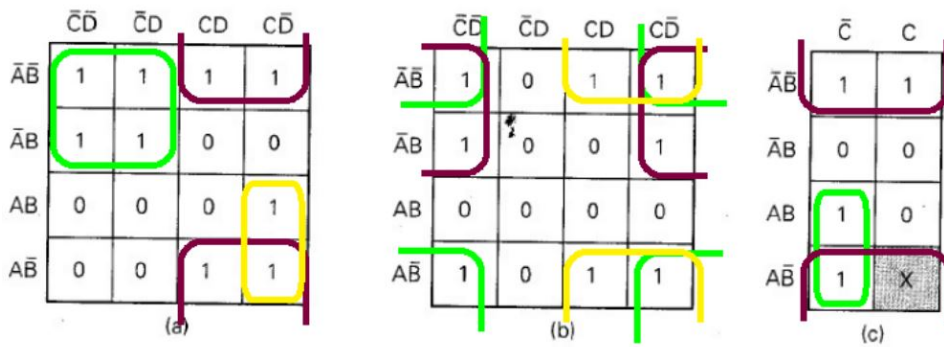


01



02



a.

$$\bar{A}\bar{C} + \bar{B}C + AC\bar{D}$$

b.

$$\bar{A}\bar{D} + \bar{B}\bar{D} + \bar{B}C$$

c.

$$\bar{B} + A\bar{C}$$

3) a)

$$X = \bar{A}\bar{B}\bar{C} + \bar{A}BC + ABC + A\bar{B}\bar{C} + A\bar{B}C$$

AB \ C	1	0
11	1	0
10	1	1
00	0	1
01	1	0

ou esse!

ou esse!

Resposta:

$$X = BC + \bar{B}\bar{C} + \bar{A}\bar{B} \Rightarrow$$

$$X = \overline{B\oplus C} + \bar{A}\bar{B} \quad \checkmark$$

ou

$$X = BC + \bar{B}\bar{C} + AC \Rightarrow$$

$$X = \overline{B\oplus C} + AC \quad \checkmark$$

Note que ambas as respostas estão corretas!

MUDANDO O MAPA K:

	BA	01	00	10	11
C					
0		1	1	0	0
1		1	0	1	1

ou esse!

ou esse!

NÃO MARQUE OS 2!  
APENAS UM DELES!

Resposta 1:  $X = BC + \bar{B}\bar{C} + \bar{A}\bar{B} \Rightarrow \overline{B\oplus C} + \bar{A}\bar{B} \quad \checkmark$

Resposta 2:  $X = BC + \bar{B}\bar{C} + AC \Rightarrow \overline{B\oplus C} + AC \quad \checkmark$

03

b.

$$Y = \overline{C} + \overline{D} + \overline{A}C\overline{D} + A\overline{B}\overline{C} + \overline{A}\overline{B}CD + AC\overline{D}$$
$$= \overline{C}\overline{D} + \overline{A}C\overline{D} + A\overline{B}\overline{C} + \overline{A}\overline{B}CD + AC\overline{D}$$

A Karnaugh map for function Y with variables A, B, C, and D. The map is a 4x4 grid with AB on the vertical axis and CD on the horizontal axis. The cells contain 1s at (00,00), (00,11), (01,00), (01,10), (11,00), (11,10), (10,00), and (10,10). The cells at (00,11) and (10,10) are circled. A vertical line groups the 1s in the first column (CD=00). A horizontal line groups the 1s in the first row (AB=00). A vertical line groups the 1s in the third column (CD=11). A vertical line groups the 1s in the fourth column (CD=10).

$$Y = \overline{D} + A\overline{B}\overline{C} + \overline{A}\overline{B}C$$

c.

$$X = A\overline{B}\overline{C}\overline{D} + \overline{A}BD + \overline{B}\overline{C}\overline{D} = ABC + AB\overline{D} + \overline{A}BD + \overline{B}\overline{C}\overline{D}$$

A Karnaugh map for function X with variables A, B, C, and D. The map is a 4x4 grid with AB on the vertical axis and CD on the horizontal axis. The cells contain 1s at (00,00), (01,01), (01,11), (11,01), (11,11), (10,01), and (10,11). The cells at (01,01) and (11,01) are circled. A vertical line groups the 1s in the first column (CD=00). A horizontal line groups the 1s in the second row (AB=01). A horizontal line groups the 1s in the third row (AB=11). A vertical line groups the 1s in the second column (CD=01). A vertical line groups the 1s in the third column (CD=11). A vertical line groups the 1s in the fourth column (CD=10).

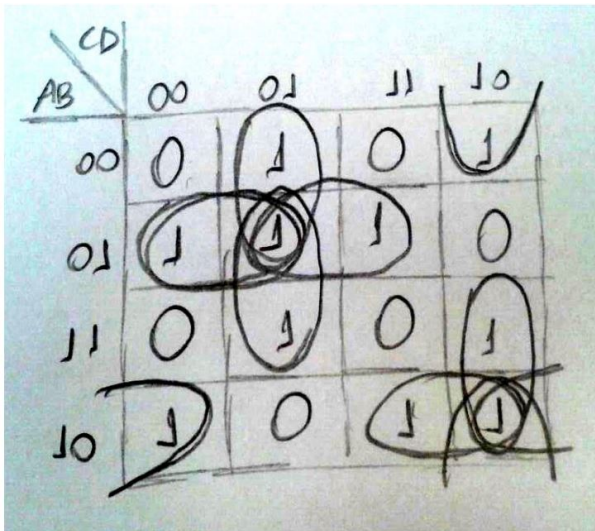
$$X = \overline{C}\overline{C}\overline{D} + AB\overline{D} + BCD + \overline{A}BD$$

A	B	C	D	S
0	0	0	0	0
0	0	0	1	1
0	0	1	0	1
0	0	1	1	0

A	B	C	D	S
0	1	0	0	1
0	1	0	1	1
0	1	1	0	0
0	1	1	1	1

A	B	C	D	S
1	0	0	0	1
1	0	0	1	0
1	0	1	0	1
1	0	1	1	1

A	B	C	D	S
1	1	0	0	0
1	1	0	1	1
1	1	1	0	1
1	1	1	1	0



$$\begin{aligned}
 S &= \bar{A}B\bar{C} + \bar{A}C\bar{D} + \bar{A}BD + B\bar{C}D + AC\bar{D} + A\bar{B}C + \bar{B}C\bar{D} + A\bar{B}\bar{D} \\
 &= \bar{A}B(\bar{C} + D) + \bar{C}D(\bar{A} + B) + A\bar{B}(C + \bar{D}) + C\bar{D}(A + \bar{B}) \\
 &= \bar{A}B\bar{C}\bar{D} + \bar{C}D\bar{A}\bar{B} + A\bar{B}C\bar{D} + C\bar{D}A\bar{B} \\
 &= (\bar{A}B \oplus C\bar{D}) + (\bar{C}D \oplus A\bar{B})
 \end{aligned}$$

